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Subject   : Required Method of Resynchronizing LTU's Modems

Distribution   : [   ] Sponsor Project Team

STATINTL

This PCN documents the necessary handshaking to properly resynchronize the modems attached to the LTUs once resynchronization has been determined to be necessary. The information comes from the Collins Radio Company publication of the instruction manual for the 8784B-1 Modem Termination Unit (MTU). It is applicable to the Mixer, DLA, and MTU handlers to be used with MAXCON.

When the processor determines that a resynchronization is necessary, "...it immediately generates a sync command which is routed to the MTU as a supervisory command word...The MTU, when it recognizes the sync command, responds by generating a 20 [plus or minus 10] millisecond sync command signal which is routed to the modem transmission facility..."

This sync command signal is referred to by the Sponsor as SI or Sync Initiate. The signal from the LTU to be used as the SI signal is the Terminal Ready signal.

"...When the modem transmission facility receives the sync command [the Terminal Ready line pulsing for approx. 20 milliseconds] from the MTU, the modem transmission facility responds by forcing the sync-in-progress line...to a logic one (1) level. This action notifies the MTU that the modem transmission facility is in the process of resynchronizing the modem transmission link. The MTU responds to the sync-in-progress command by inhibiting both the transmit and the receive data. If the processor queries the MTU during this period, the MTU responds by generating a sync-in-progress supervisory monitor word...When the modem transmission link is finally synchronized, the sync-in-progress line returns to a logic zero (0). With this action, the MTU begins to generate a minimum of 24 sync idle characters which are then routed to the modem transmission facility on the transmit data line...When at least 24 sync idle characters have be generated by the transmit control circuit and three (3) sync idle characters have been counted by the receive control circuit..., the MTU is prepared for normal operation. When the processor now queries the MTU, the MTU will respond by generating an in-sync/operate supervisory word ..."

The above description shows the interaction between the MTU and the modem transmission facility. The Sponsor refers to his

sync-in-progress line as the SIP or the Sync-In-Progress line, so little adaptation is necessary. The signal line to the LTU to be used for this line is the Clear-to-Send line. Since the modem transmission facility (modem) may resynchronize due to factors beyond the LTU's control, the LTU shall have to await the resynchronization of the modem as if it initiated the resynchronization to begin with. Issuance and reception of sync idle characters shall have to follow this non-LTU initiated resynchronization as well.